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SEARCH REQUEST FORM Scientific and Technical Information Center - EIC2800

Rev. 8/27/01 This is an experimental format -- Please give suggestions or comments to Jeff Harrison, CP4-9C18, 306-5429.

Date 2/24/04 Serial # 10/022,297 Priority Application Date _____

Your Name M. Lewis Examiner # _____

AU 2899 Phone 202-1838 Room 5A30

In what format would you like your results? Paper is the default. ☒ PAPER ☐ DISK ☐ EMAIL

If submitting more than one search, please prioritize in order of need.

The EIC searcher normally will contact you before beginning a prior art search. If you would like to sit with a searcher for an interactive search, please notify one of the searchers.

02-25-04 A03:52 IN

Where have you searched so far on this case?

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What relevant art have you found so far? Please attach pertinent citations or Information Disclosure Statements. see DPC1 search 3/2/04

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What is the topic, such as the novelty, motivation, utility, or other specific facets defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

Claims = 4, 13 - 16, 19 - 20, 25, 26
(Independent)

Problem: see paragraphs 3-10

Solution: " " 11-13

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Searcher: HARTON

Searcher Phone: 2-2663

Searcher Location: STIC-EIC2800, CP4-9C18

Date Searcher Picked Up: 2/27/04

Date Completed: 3/03/04

Searcher Prep/Rev Time: 550

Online Time: 159

Type of Search

Structure (#) _____

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20/9/3 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

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5841578 INSPEC Abstract Number: A9807-0630M-002

Title: Strain gauge techniques for measuring thermal expansion

Author(s): Lord, J.D.

Issued by: Nat. Phys. Laboratory, Teddington, UK

Publication Date: May 1997 Country of Publication: UK 4 pp.

Material Identity Number: XR98-00056

Report Number: NPL CMMT(MN)012

Abstract: A novel strain gauge technique has been used to measure the thermal expansion behaviour of a number of materials including **copper**, **aluminium** and both **polymer** and metal matrix composites. **Copper** and **aluminium** were used for calibration purposes and validation of the technique. The values obtained from the strain gauge method for the **coefficient** of thermal **expansion**, between 25-100 degrees C, of **copper** and **aluminium** were 16.6 and 23.4×10^{-6} degrees C respectively and these are in good agreement with typical handbook values. Two case studies are presented in this document, but a number of other materials are covered in an NPL report which describes the technique in more detail and discusses the merits and application of the strain gauge method. Practical tips are given where possible and conventional dilatometry data are presented for some materials for comparison. It is difficult to quantify the absolute accuracy of the measurements because this depends to a large extent on the quality of the strain gauge installation, but uncertainties associated with the measurements are typically 5-10%.